ODL

Open Discovery of STEM Laboratories

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OPEN DISCOVERY

OF STEM LABORATORIES

Dissemination Plan

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Legal Notices

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ODL Consortium

Beneficiary Number	Beneficiary name	Beneficiary short name	Country
P1	FUNDACION DEUSTO	FD	Spain
P2	ELLINOGERMANIKI AGOGI	EA	Greece
P3	HARIDUSE INFOTEHNOLOOGIA SIHTASUTUS	HITSA	Estonia
P4	LIETUVOS NUOTOLINIO IR E.MOKYMOSI (LIEDM) ASOCIACIJA	LieDM	Lithuania
P5	UNIVERSITA DEGLI STUDI DI PALERMO	UNIPA	Italy

Executive Summary

The Open Discovery of STEM Laboratories (ODL) project was created to offer to secondary school teachers a new approach of an incorporation of virtual and remote laboratories in curricular. This approach - massive open online course (MOOC), is widely employed in university education of Europe, America and Asia. Because of online nature, this methodology allows teachers and students of rural area to use the best practice of STEM education developed by university faculty staff and teachers-pioneers in the field.

The project success and future sustainability of the ODL intellectual outputs depends on if the developed products, methodology can reach the target groups. Therefore, the ODL Dissemination Plan is composed to create the strategy of dissemination of the project outcomes and outputs to target audience. The target groups – external and internal, their benefits as well as impact of ODL results on them are articulated in this document. In order to introduce the ODL developments to end-users various online and offline dissemination channels will be used during project time. The main dissemination channel for the project is ODL website (opendiscoverylabs.eu). The consortium will use the visual presentation of the project (logo) and offline instruments for delivering info such as printing promotional materials (leaflets and roll-up), dissemination workshops and events, and personal contacts. The Facebook (https://www.facebook.com/groups/555612337923550/) plays role of prompt communication with teacher's community, namely youngest representatives of them.

The Dissemination Plan consists of Introduction, 3 Chapters, Conclusion and 5 Annexes. The Introduction outlines main information about the project and general content addressed to the readers. Chapters are devoted to explanation of target groups - how to reach them, and basic dissemination channels – website and print promotion materials. The Annexes provide examples of the print materials in PDF format, and dissemination activity of the consortium. The last part will be continually updated to keep the information up to date.

1 Introduction

ODL will equips European school teachers with innovative approach - micro-MOOC (mMOOC), to deploy STEM laboratories and their application in the everyday teaching practices and, thus, strengthen the profile of the teaching professions. The project will foster partnerships between universities, research centers, professional associations, and school sector to modernize the school education by enhancing digital integration in learning and teaching processes with access to remote and virtual experiments. The program will be based on the requirements of STEM competence of school curricula and will employ the MOOC methodology.

ODL aims to:
• Offer teachers collaboration in creating innovative STEM school curricula;
• Elaborate MOOC methodology and propose an its implementation in a classroom;
• Merge remote or virtual STEM labs in day-to-day teaching practicing.

The project targets both external stakeholders (STEM school teachers, pre-service teachers, and school students, schools and labs providers, and decision-making stakeholders who might support an implementation of mMOOC methodology at schools at institutional and regional levels) as well as internal one including consortium staff and their students. In order to reach mentioned target groups and to promote the ODL approach, the consortium uses online and offline dissemination channels. Online dissemination channels include a project website, Facebook as a social media channel, and publication in different online portals; offline dissemination will be organized in a format of publications, workshops, presentations, and other events organized by consortium in support of local civil, professional and scientific communities.

The project website (http://opendiscoverylabs.eu/) is the main dissemination channel used by the project consortium, as it delivers information and project intellectual outputs to target audience. It provides information about the project, partners, useful official downloads, available and organized workshops, events and activities in framework of the ODL, and the link to the social media channel. When the ODL MOOC platform will be established, it will provide the access to the mMOOCs created during the project. Moreover, the website will propose offline dissemination products such as promoting materials, papers, articles, and reports from the events. On the website contact information of institution and lead person participated in the project can be also found.

In this document the project target groups are briefly described (Section 2). Section 3 provides the overview of the offline communication channels. Section 4 is concentrated on the project website as the main communication channel. The website structure and navigation, user and author interfaces, main content types (page types), as well as social media accessible from the website will be described. Annexes 1, 2, 3, 4 and 5 show the preliminary dissemination plan provided by each partners for first year of running project, communication plan and described print materials as PDF-files.

2 ODL Target Groups

The ODL project aims to involve both internal and external stakeholders in project activities as contributors and active participants. We assume that school teachers, instructional designers, school students, as well as lab owners and educational providers are expected in both ways as actively contributors to the project and as "end-users" of the project results using provided instruments and e-facilities to extend learning and teaching activities. Main target groups and their interests and involvements are briefly described below.

2.1 External target audiences

STEM school teachers will benefit from the participation in the project by:

- expanding their digital skills and competences which will increase their professional development, and therefore, contribute efficiently into objectives of their schools. The provided infrastructure will motivate their daily work by encouraging students into learning process;
- guidelines will support their teaching practices: incorporating STEM labs in the curricula; embedding MOOC concept in school environments, and building students STEM competence;
- competence and knowledge to create innovative and engaging education instrument - micro-MOOC;
- experience of collaborative work with colleagues from partners EU countries will contribute into understanding of different educational systems, other national curricula, while bringing additional societal value by developing a positive approach towards other cultures;
- OERs in national languages that will facilitate them especially in rural areas;
- analytics available through the MOOC platform will help to evaluate the student performance and interaction for the purposes of enhancing educational practices and techniques.

Pre-service teachers in addition to above mentioned impact will have:

- opportunity to collaborate with representatives of faculties and university students communities from other EU countries bringing transnational component in their future teaching;

School students (12-18 years old) might benefit from the project outputs by:

- applying MOOC methodology as an instrument of lifelong learning and STEM labs available over the project platform;
- developing their competences - scientific, technological and digital;
- improving their capacity in solving challenging real-life problems by working in STEM labs;

- increase their interest in self-educating (MOOC), novelty (STEM labs) by developing the necessary skills for forming strategies (combining different micro-MOOCs) in order to reach their goals and thus helping them to succeed in their future employment.

The project results and outputs aims also to attract youth in science and engineering careers by offering a creative work on STEM laboratories equipment.

Other stakeholders:

Instruction and curricula designers will get new school approach of employing the MOOC methodology with STEM laboratories in classroom.

Policymakers at local, regional and national levels and *schools* as an education institution

- reinforce the usage of pedagogical, technological and educational innovation, and promotion of STEM for youth;
- initiate and support their experience in transnational cooperation by opening new ways of collaboration beyond the local or regional levels;
- expand MOOC methodology for other school subjects.

2.2 Internal target group

The internal target group is represented by staff of the consortium. We believe that the work on the project will impact our team in different ways such as:

- strengthen a transfer of knowledge and technology to society;
- relate their research & innovation to the practice & society demands; incorporate the society needs in new studies and projects;
- employ transnational teamwork, different working styles, and exchange of knowledge to heighten the quality of project's intellectual outputs;
- sustain organization research excellence due to a publication of scientific articles about these project's results in relevant journals and conferences.

2.3 Target groups communication

In order to reach the project target audiences and to build fruitful communication between them, online and offline dissemination and communication channels and activities will be created and offered. One of the project aims to create personal communication with its stakeholders. In this case the personal contacts, dissemination workshops and events, social media such as Facebook will play a significant role in promotion of the ODL between the end users as well as engaging the targets groups to apply the project results in their everyday professional experience. Dissemination activities and their impact will be reported over the progress and final report, as well as on the ODL website.

The detailed communication plan built for consortium to reach the members of the school teachers' community and other stakeholders is attached as Annex 5.

The relevant information, e.g., experience presentation will be delivered over project workshops and events. Moreover, the communication with other EU projects in the same field will be used as dissemination channels as well. And last but not least, project users may be informed about the project news visiting the ODL website and subscribing to the project Facebook - social media channel.

3 Print dissemination materials

The print dissemination materials are the main channel of offline promotion activities of the project. The materials created by Deusto Foundation will be distributed by the consortium members among the external stakeholders.

The print dissemination materials include:

- ODL logo is the visual identity of the project (Annex 1).
- ODL project leaflet (*Figure 1*) containing general information about the project: objectives, target groups, and two STEM definitions. (Annex 2). The leaflet is developed in English, all consortium national languages, and Basque – as common local language of public education system in Basque country where Deusto Foundation is situated.
- ODL roll-up designed in English can be used to present the project on conferences and exhibitions. (Annex 3)

Figure 1: ODL leaflet

Deusto Foundation will print the English version of leaflets (about 200 copies) and provide them to the consortium partners for distribution for target audiences. However, the leaflets in national languages as well as the ODL roll-up (size is 800 x 2000) will be printed by project partners themselves in order to share the management costs, avoid delays and additional shipping costs.

4 ODL Website – main dissemination tool

This section describes the ODL website as a main dissemination channel of the project. Playing the role of the significant online contact point, ODL website will also serve as a basis and a connecting chain between other available online dissemination channels. The website provides comprehensive information about the project providing relevant messages for each target group and connecting interested stakeholders with consortium members.

The ODL project will actively use other websites (e.g. partner websites), online blogs and newsletters to announce and disseminate project-relevant news, workshops and events. Further, social networks, such as Facebook will be used to create a community around the project. Other Web 2.0 media, such as YouTube and ODL MOOC platform, will be used to disseminate project-related and project-developed resources. All these online dissemination channels will be connected to the project website. Both centralized content management and contributions of external stakeholders will be supported. News announced on the website will be disseminated via the Web 2.0 channels as well. The main information on website will be available on English and consortium national languages – Greece, Estonian, Italian, Lithuanian and Spanish.

The project website will support the offline activities such as dissemination workshops, national events, transnational meetings and Teacher school by announcing them here. In the download area project leaflets and roll-up as well the main supporting documents offered by National Erasmus+ Agency will be made available for download and print. Thus, the ODL project website will be the main communication channel supporting both online and offline activities of the consortium.

4.1 Website Structure and Navigation

The ODL project website (http://opendiscoverylabs.eu/) provides basic information about the project, its objectives, organized national events, training (Teacher School) and dissemination workshops, project results, as well as consortium contact information. The Homepage (*Figure 2*) introduces the project for the visitor offering the main ODL objectives, main navigation menu, three boxes that access to News, mMOOCs, and Downloads, as well as Facebook sharing button (on the bottom).

Main navigation menu consists of seven main items:

- Home: returns user to the start of the website - Homepage from any space of the website.
- News: accesses the news blog that offers the description of events organized or planning to offer to target groups in frame of the project, relevant conferences, interesting link to resources, articles, and other media. The info will be published in language of country where an event, workshop, training will held.
- About Us: delivers general information about the project, its vision and objectives, as well as target audiences (*Figure 3*).

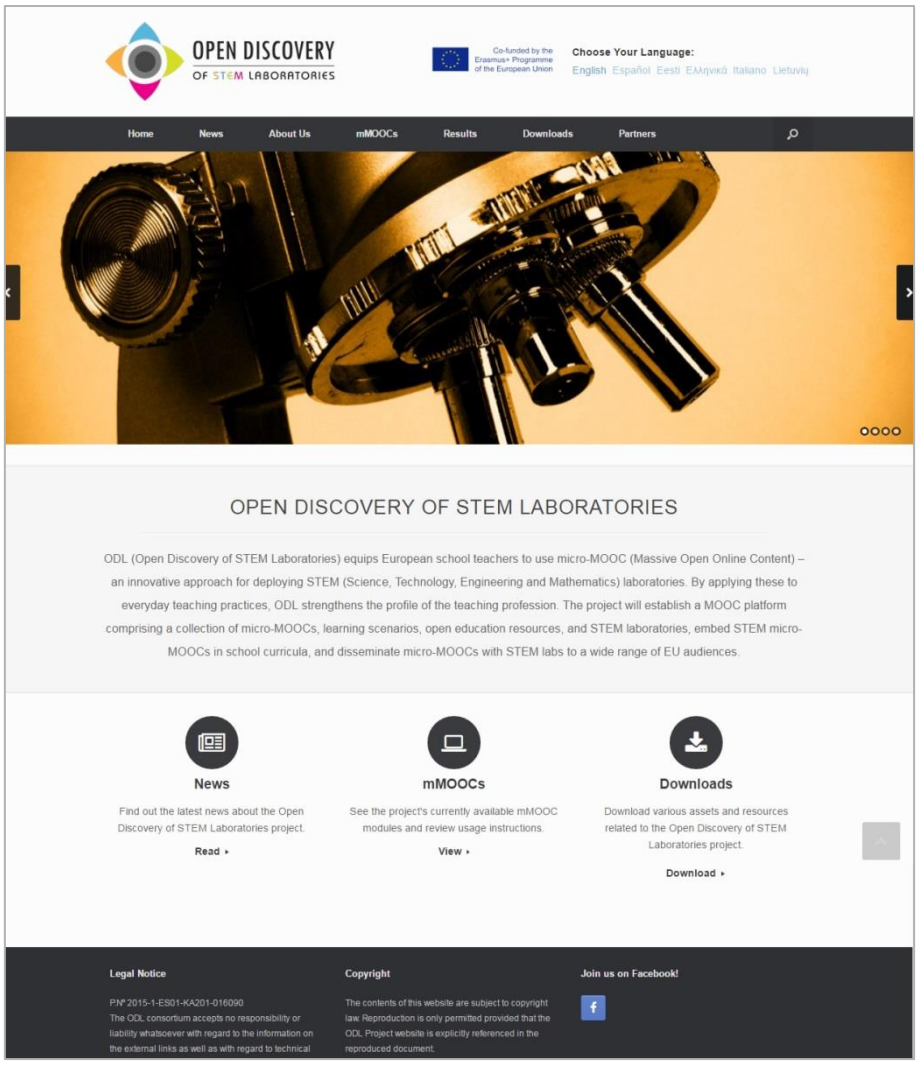


Figure 2: project website: Homepage

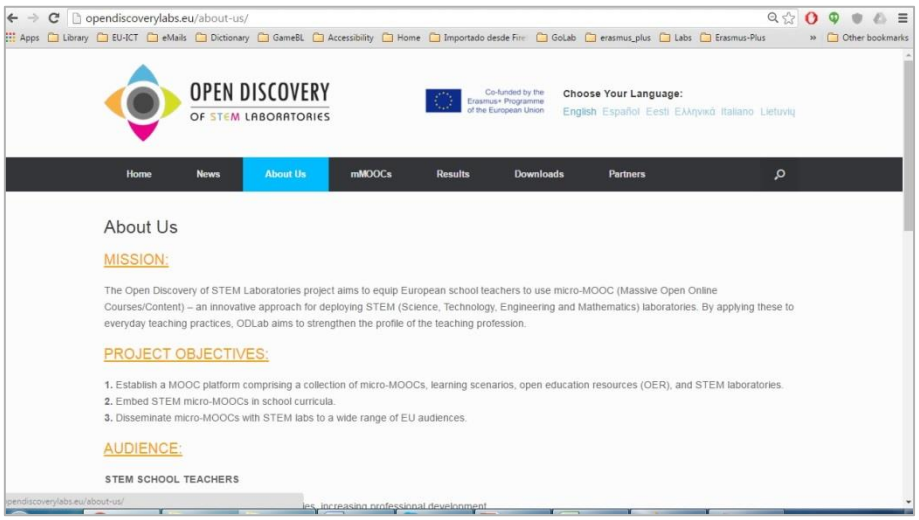


Figure 3: project website: About Us

- mMOOCs: here the user can find a short explanation of what MOOC is, and a list of available resources provided by the project (the first mMOOC will be available Apr.2017)
- Results: represents the ODL results, such as available scenarios, public project working documents, and scientific publications. Information here will be added as soon as it will be available from Intellectual Outputs.
- Downloads: offers the ERASMUS+ visual identity documents, guide of grant usage, and ODL project documents.
- Partners: ODL consortium logos with connection to institution website and contact information of partners are listed on this page. During the project time, this area can be extended with associated partners.

Search function (*Figure 4*) filters information based on keywords provided by the website visitor.

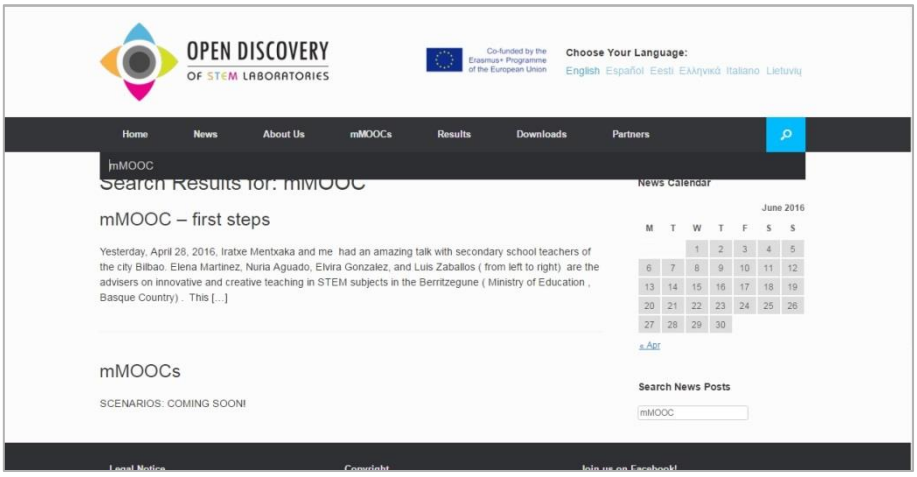


Figure 4: project website: Search

The option "Choose Your Language" (top of the website) allows to get the general project information on one of consortium language.

4.2 ODL website content management system

To implement the ODL project website, the existing well-supported Content Management Systems (CMS) WordPress is used taking advantages of its comprehensive functionalities. Based on the available features and plugins a website can be created within a shorter period of time in compare with those that will be designed from scratch. At the same time, it is open software and because of its nature it supports up to date configuration, new features, and continuous development of websites. Therefore, the ODL website is contemporary from technological point of view.

The Deusto Foundation server is the host of the ODL project website. It was done in order to reduce the budgetary component of the project dissemination activity.

Based on the technical perspectives, usability and user interface requirements the WordPress website software (https://wordpress.com/create/) has been selected to serve the ODL website.

Below lists the some requirements that the ODL developers use to choose the CMS software:

- Scalable website design to fit the resolution of large variety desktops, laptops, tablets, and smartphones;
- Intuitive and friendly user interface;
- Massive collection of themes and plugins that allow to convert the website in desired product and develop any features necessary to deliver info to project target groups;
- Flexible management to support different roles (e.g. author, editor);
- Enabling different actors to edit website if necessary;
- Translate and perform the content in different languages, in our case six European ones;
- Search and display of content of website;
- Integration of social media, e.g. Facebook;
- Persistent storage of the website content;
- Low-cost website maintenance in the future;
- Cost-free CMS software.

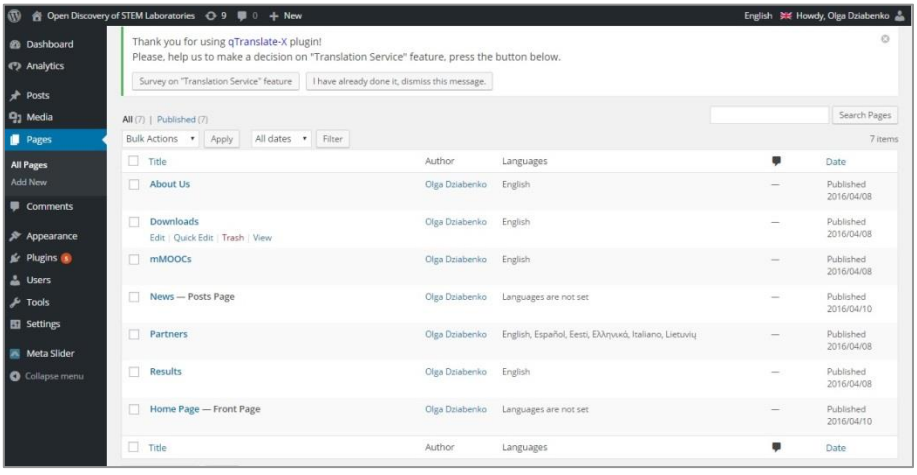


Figure 5: project website: dashboard of the authoring space

After a survey of the existing CMS, the very last WordPress 4.4.3 (https://wordpress.org/) has been picked out to meet provided above set of basic requirements. WordPress is supported by the community of developers and is based on modular plugins system. The detailed documentation is also available over WordPress

Codex space - the online manual for WordPress and a living repository for WordPress information and documentation. Developers can contribute to the website code by creating the plugins offering special features or functions. For example, the plugin qTranslate-X supports the presentation of website content in different languages. The WordPress applies MySQL open source database. Because of this it is easy to maintain the data storage. In addition, there are more than thousand commercial and free of charge themes that support various good layout website designs. We use Vantage theme for building ODL website.

Furthermore, the WordPress is very intuitive in use that no special knowledge and skills need to incorporate the content. The authoring space is represented by dashboard (*Figure 5*), appearance, settings and different tools helpful in organization of content.

4.2.1 Lessons learned

The ODL uses Vantage (https://wordpress.org/themes/vantage/) - adaptive theme. Because of this the certain rules such as image sizes, menu structure, and layout of certain elements have been applied by default. However, the graphical presentation of website takes a special effort to offer responsive display for different screens. The main visual presentation was developed before the website implementation begins. The scalability of images should be taken into account and require to provide a simple solution for it. The website graphic designer from very beginning should create a web layout with the different grid concept, e.g. the grid of the width of smartphones. In order to give a consistent functionality to website visitor, the designer also needs to consider the patterns placing web elements. The visual website implementation, fine tuning of CSS is also essential and still requires neatly development to ensure the consistent visual look.

5 Other dissemination channels

Publication: The main approach for the sound presentation of the ODL on the school landscape is to make it visual for the society. The publication may play important role in it. The media instruments such as local newspapers, online journals, facebook wall and so on will be employed to reach the target groups.

The consortium presents the MOOC concept in school environment, and results of a mMOOC implementation in their country on professional conferences. We will encourage teachers - participants of the ODL multinational events - to broadcast the project outcomes and ideas between their colleagues.

Events: The local roundtables with school teachers organize in order to discuss the best way of incorporation MOOC in school environments, the students' engagements in self-education, introduction to the students and their parents/guardians a variety of available teaching and researching science online laboratories, the openness of learning resources developed for the primary and secondary school levels.

The special events with educational decision-makers are devoted to present a contemporary MOOC approach for a school as an alternative way to personalize the learning path for their students. Another channel for a presentation of the results could be the institution open doors, forums and other events where direct communication could be built between the consortium members and society representatives.

Multiplayer Events & Workshops: Although the multiplayer events are the instrument to train school teachers to understand the MOOC approach in school context, use an ODL MOOC platform (moocspace.deusto.eu), design mMOOC to serve their lessons activities, implement developed mMOOC in class instructions, we will also adjust it as a dissemination tool. Through it we will expend project as much as possible schools and stimulate the consortium-stakeholders dialog and therefore impacting and innovating lessons structure at school sector.

Workshops, organized in frame of other EU projects, will be employed for presentation of ODL introducing to teachers the use of online virtual experimentations and remote laboratories as well as MOOC methodology to help them develop or enhance their teaching skills and practices.

6 Conclusion

The ODL consortium creates a project website, Facebook as a social media communication point and other channels such as dissemination workshops, events, and conferences, as well as print materials to support project promotional activities. During the project time, the content of website and Facebook will be updated on regular basis. This dynamic process will involve entire ODL team for content and action contribution. The Deusto Foundation will coordinate online announcements and postings on the project website, and create print materials. All consortium partners will be encouraged to actively post information on the ODL Facebook wall boosting the ODL announcements.

Annex 1: Project Visual Identity

Annex 2: Standard Project Leaflet

Annex 3: Project Roll-Up

Annex 4: Dissemination Plan for the period 01/11/2015- 31/10/2016 and each ODL partner.

Annex 5: Project Communication Plan

Annex 1: Project Visual Identity

Annex 2: Standard Project Leaflet

(English version)

(Estonian version)

(Basque version)

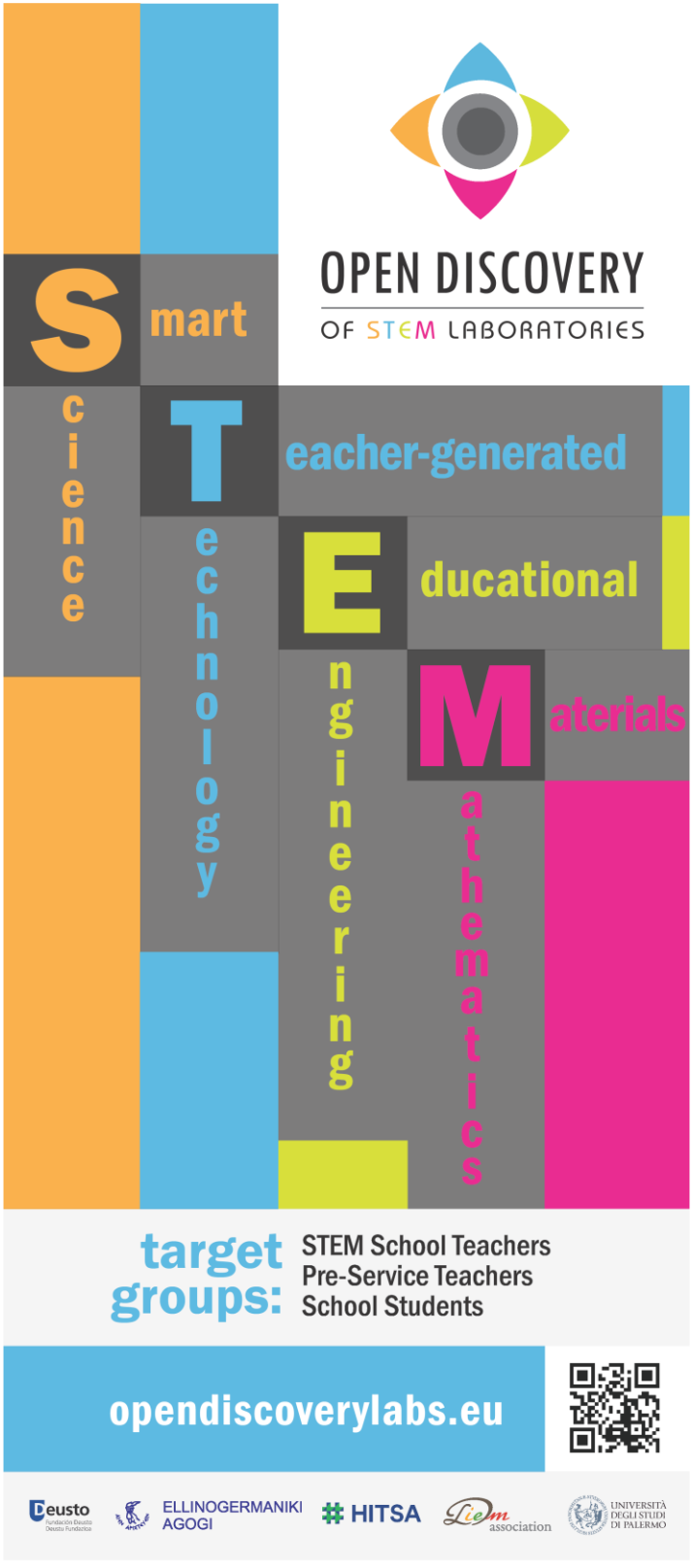
(Greek version)

(Italian version)

(Lithuanian version)

(Spanish version)

Annex 3: Project Roll-Up



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Annex 4: Dissemination Plan for the period 01/11/2015- 31/10/2016 and each ODL partner

Activity (diss. workshop, event, publication, article, conference, etc.)	Date (planning)	Date (performing)
DEUSTO FOUNDATION		
Publishing promoting info on the Learning Group website (http://dtlearning.deusto.es/home/projects/)	Dec.2015	17 Dec.2015
Event: ForoTech2016 (print promotion materials)	March 2016	09-11 March 2016
Diss. workshop: discussion with Berritzegune (Bilbao) advisers on innovative and creative STEM teaching	March-Apr. 2016	28 Apr.2016
Diss. workshop: discussion with CECIRE (Barcelona) teachers on innovative and creative STEM teaching	March-June 2016	09 June 2016
Diss. Workshop with STEM teachers of Bilbao region	Sept-Oct. 2016	
Diss. Workshop with STEM teachers on national level	Sept-Oct. 2016	
LIEDM ASSOCIATION		
Publishing info about ODL project in LieDM website in national language (http://liedm.net/projektai)	Jan 2016	22 Jan 2016
Publishing info about ODL project in LieDM website in EN (http://liedm.net/en/activity)	Jan 2016	22 Jan 2016
Presentation of ODL project at National Open Education week in Lithuania	March 2016	7 March 2016
Local workshop with STEM teachers	Sep-Oct, 2016	
National Multiplier Event in Lithuania	Sep-Oct, 2016	
HARIDUSE INFOTEHNOLOOGIA SIHTASUTUS		
Publishing project information on the Foundation's website (http://innovatsioonikeskus.ee/et/mooc-odl)	Dec. 2015	Dec. 2015
Discussion with STEM teachers in Tallinn on possibilities of using labs and MOOC approach in teaching STEM subjects	March-Apr. 2016	14 Apr. 2016
Diss. Workshop with STEM teachers of Tallinn region	Sept-Oct. 2016	
Diss. Workshop with STEM teachers on national level	Sept-Oct. 2016	
UNIVERSITY OF PALERMO		
Dissemination workshop with teachers of Catania Province on innovative and creative STEM teaching	Jan-Feb 2016	4-5 March 2016

Diss. workshop: discussion with teachers of Palermo Province on innovative and creative STEM teaching	March-Apr. 2016	27 Apr.2016
Diss. workshop: discussion with STEM teachers of Palermo Province on OERs and microMOOCs	March-Apr. 2016	19 May 2016
Conference: GIREP – International Research Group on Physics Teaching- Seminar 2016 (Krakow-Poland)	March-Apr. 2016	30 August-3 Sept. 2016
Conference: SIF – Congresso Nazionale della Società Italiana di Fisica – 2016 (Padova-Italy)	March-Apr. 2016	26-30 Sept. 2016
Diss. Workshop with STEM teachers on local level	Sept-Oct. 2016	
Diss. Workshop with STEM teachers on national level	Sept-Oct. 2016	

Annex 5: Project Communication Plan

I. Internal consortium communication plan
II. Communication between Consortium Partners and Secondary Schools involved in the project activities in their countries
III. Communication with national and EU stakeholders

I. Internal Consortium Communication Plan

W H Y? **Purpose of communication**	**W H O?** **Addressed communication**	**W H A T?** **Content**	**H O W?** **Media for communication**	**W H E N?** **Schedule of communication**	**BY W H O M?** **Responsible body**
Project management: Ongoing project correspondence	To all consortium partners	project status report	Mail; consortium space (Google Drive Format), email, virtual meeting and f2f meetings	On a regular basis and as requested; F2F meeting according schedule (see ODL Calendar)	P01
Project management: Finances	To all consortium partners	Financial documents request (progress and final report)	Mail/email; consortium space (Google Drive Format); virtual meetings	As scheduled, on the regular basis and as requested	P01
Project management: Project transnational meeting organization	To all partners	Scheduled project meeting, agenda, minutes	Email, documents at consortium space, virtual communication	Kick-off Dec.2015 (ES), 1nd – May.2016 (LT), 2rd – Nov2016 (GR), 3th – Jul.2017 (EE) 4th - March 2018 (IT)	P01; P04; P02; P03; P05
Project management: Monitoring and balancing work within work timeline	All consortium partners	Progress report	email and online discussion	As scheduled according the work plan	Outcomes and Tasks Leaders
Project management: Report to National	All consortium partners	Request for data, draft version of progress and final	eMail, Mail, collection internal documents, virtual	Scheduled period: Jul.2016; 70% of the budget,	All partners, P1

Erasmus+ agency		report	meetings	May 2018	
Dissemination: Additional project information and documentation	All project partners	Discussions, Presentation	Email, Mail, ODL consortium space	As requested	All partners
Dissemination: Dissemination activities information	All project partners	Dissemination activity description ; published papers	ODL consortium space	As available	All partners

II. Communication between Consortium Partners and Secondary Schools involved in the project activities in their countries

W H Y? **Purpose of communication**	**W H O?** **Addressed communication**	**W H A T?** **Content**	**H O W?** **Media for communication**	**W H E N?** **Schedule of communication**	**BY W H O M?** **Responsible body**
General project activities, project related questions, solution project tasks: Better workflow	Secondary Schools from the country of Consortium partner (for example, P1 works with secondary schools from Spain)	Information about current activities, support, project questions and tasks	Phone, email, project website	On a regular basis	All partners
Project activities: Organization of common activities	Secondary Schools from the country of Consortium partner	Discussions, sharing information	Phone, email, project website, meetings	As scheduled	All partners
Project activities: The events/training on local, national & international levels	Secondary Schools from the country of Consortium partner	training model; mMOOC content and methodology for curriculum integration	Phone, email, meetings, Project website	Systematically and as requested	All partners

III. Communication with national and EU stakeholders

W H Y? **Purpose of communication**	**W H O?** **Addressed communication**	**W H A T?** **Content**	**H O W?** **Media for communication**	**W H E N?** **Schedule of communication**	**BY W H O M?** **Responsible body**
Dissemination: Provide information about the project goals, tasks and objectives	National/local and EU stakeholders and policymakers	Project information; backgrounds, objectives, benefits, results	Project website, institutional website, local media, presentations, meetings, emails/mail, Phone, Facebook ODL group,	On a regular basis	All partners
Dissemination: Raise public awareness	National/local and EU stakeholders and policy makers	Project achievements, events, activities. Information about possible participation	Publication in journals and magazines, presentation on conferences, project and Ministry Education websites, local media, Facebook ODL group,	On a regular basis	All partners
Dissemination: Promote the achievements and project results and products	National/local and EU stakeholders and policy makers	Dissemination printing materials, exploitation plans	Publication in journals and magazines, presentation on conferences, project	On a regular basis	All partners

			and Ministry Education websites, local media, Facebook ODL group,		
Promotion and Exploitation: assure sustainability	National/local and EU stakeholders and policy makers	Support ODL MOOC platform, mMOOC OER, offer mMOOC methodology in the school, encourage teachers to use mMOOC in school, offer the MOOC methodology on teacher training	Publications in international journals and conferences; delivery of promotion materials, Facebook ODL group, project website; email	On a regular basis	All partners